

*Cuban missile crisis*

## The San Cristobal Trapezoid

John T. Hughes with A. Denis Cliff

*Aerial photos give crisp, hard information, like the dawn after long darkness.*

*Arthur Lundahl*

A courier stepped forward to meet me as I reached the Pentagon's River Entrance. I remember the moment: 7:30 a.m., 8 February 1963, a wintery morning brightness just emerging. "Mr. John Hughes?" "Yes," I said. "I've been asked to deliver this to you." He handed me a manila envelope, return address, "The White House," in block letters, and departed.

My office was nearby inside the Pentagon in the Joint Staff spaces next to the National Military Command Center, almost directly beneath the office of the Secretary of Defense. I opened the letter. It was from the President.

Dear Mr. Hughes:

I thought you did an excellent job on television in explaining our surveillance in Cuba. I understand it was done on short notice. I want you to know how much I appreciate your efforts. With best wishes.

Sincerely,  
John Kennedy

Cuba. For the past seven months, the US Intelligence Community had riveted its attention on that island nation. Its topography, road network, cities, military garrisons, storage depots, deployed ground-force units, airports and airbases, seaports, merchant shipping and naval units had been photographed, categorized and studied. US reconnaissance also zeroed in on Soviet merchant ships, fighter aircraft, surface-to-air-missile (SAM) units, missile patrol boats, and rocket forces.

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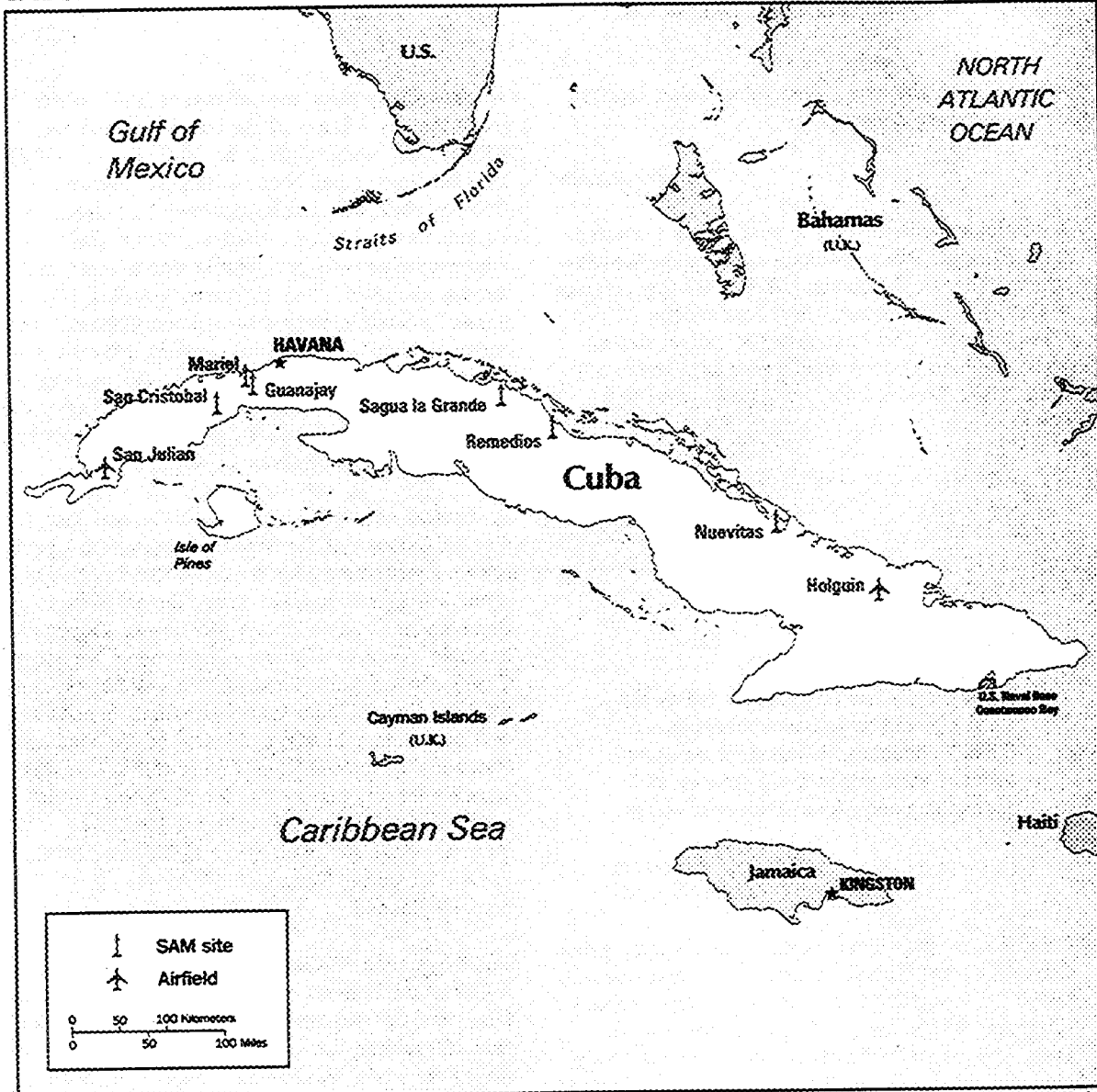
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As photointerpreters, my colleagues and I could recall the key features of the intermediate-range (IRBM) and medium-range ballistic missile (MRBM) sites the Soviets had been rushing to complete in October 1962: the missile-servicing buildings, the nuclear warhead storage bunkers, the oxidizer vehicles, propellant vehicles, missile shelter tents, and the missiles. San Julian, Holguin, Nuevitas, Mariel, Sagua La Grande, Remedios and San Cristobal were names that took on a special meaning after the discovery of the missiles and bombers, the peaking of the crisis, Soviet withdrawal, and my briefing to the nation on network TV on 6 February 1963, two days before the President's letter arrived.

As Special Assistant to Lieutenant General Joseph F. Carroll, Director of the Defense Intelligence Agency (DIA), I was responsible for providing reconnaissance intelligence support during the crisis to Secretary of Defense Robert McNamara, Deputy Secretary Roswell Gilpatric, Chairman of the Joint Chiefs of Staff (JCS) General Maxwell Taylor, and the Joint Chiefs. There had been intensive coordination with Arthur Lundahl, Director of the National Photographic Interpretation Center (NPIC). In this capacity, he was responsible for providing critical national intelligence support to the President, Director of Central Intelligence (DCI) John McCone, and the Executive Committee of the National Security Council.

Building on the CIA's initial U-2 reconnaissance flights in the summer and early autumn of 1962, the Department of Defense would eventually fly more than 400 military reconnaissance missions over Cuba during the crisis. Targeting information for each photo mission had to be developed for the JCS Joint

1962 SAM Sites



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Reconnaissance Center (JRC) to coordinate the operations and allow for policy review by the Secretary, the Deputy Secretary, and the White House, and then be delivered to the "recce" units that would fly the missions. The highest priority was to move that film from the returning aircraft through the photo labs, through analysis, to the policy level of government—a 24-hour-a-day operation, with intense time pressures, and a crucial need for accuracy.

In his introduction to Robert F. Kennedy's memoir of the Cuban missile crisis, *Thirteen Days*, McNamara wrote:

The performance of the US Government during that critical period was more effective than at any other time during my seven years' service as Secretary of Defense. The agencies of government—the State Department, the civilian and military leaders of the Defense Department, the CIA, the White House Staff, and the UN Mission—worked together smoothly and harmoniously.<sup>1</sup>

The entire intelligence-operations team for US reconnaissance against Cuba demonstrated a sense of urgency and national mission that epitomized this effort.

### Tactical Data

Intelligence did not perform flawlessly during the crisis. The Intelligence Community had not provided clear warning of the Soviet Union's intention to place offensive nuclear weapons in Cuba. Indeed, the debate over Khrushchev's motives and the USSR's strategic intentions continues. The community did, however, provide tactical intelligence on the USSR's rapid deployment of missile and bomber forces in Cuba. As the crisis mounted, tactical warning and targeting data were developed and steadily updated in support of strike options being developed by the JCS and the NSC Executive Committee. Targets included the MRBM and IRBM missile installations, the IL-28/BEAGLE bombers, the 24 SA-2 SAM sites, the MiG-21 fighters, and other ground, air, and naval targets.

The intelligence flowing from the reconnaissance missions provided the irrefutable evidence the US required to document to the world the basis for its response, as well as the targeting data that would have been needed if the crisis touched off an armed conflict. It tracked the surge of Soviet military personnel to some 22,000 by the end of October 1962, and then the ebb in those numbers to some 17,000 as the troops manning the offensive weapons departed.

### Strategic Warning

Strategic warning is the most important component of effective intelligence. Perhaps the greatest barrier to developing effective strategic indications and warning for decisionmaking is the tendency of the human mind to assume that the *status quo* will continue. The Cuban missile crisis and many other conflicts of the postwar era, including the Arab-Israeli Yom Kippur War and the Falklands conflict, confirm that nations generally do not credit their potential opponents with the will to take unexpected acts. We did not believe the Soviets would do so in 1962.

I was part of a team assisting General Carroll in his responsibilities as a member of the US Intelligence Board (USIB), the top policy forum of the Intelligence Community, whose membership included the DCI and the Deputy Director of Central Intelligence, the Director of the DIA, the Department of State's Director of Intelligence and Research, the Director of Naval Intelligence, the Army and Air Force Assistant Chiefs of Staff for Intelligence, the Director of the National Security Agency, the Assistant General Manager for Administration of the Atomic Energy Commission, and the Assistant to the Director of the FBI. Each person brought the intelligence strengths of their respective organizations to the table. It was the Board's primary duty to produce the formal National Intelligence Estimates (NIEs) and Special National Intelligence Estimates (SNIEs) on key international issues and events for consideration by the NSC. With the memory of the Bay of

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Pigs disaster still fresh and with the politically charged US concern over Fidel Castro's consolidation of communist power in Cuba and the growing Soviet military presence there, the USIB focused on Cuba in its estimates. At the same time, the Intelligence Community tracked and recorded the entry of Soviet weapons by type and capability.

**Two NIEs**

NIE 85-2-62, *The Situation and Prospects in Cuba*, was issued by the Board on 1 August 1962. It underlined Castro's political primacy, the loyalty of the Cuban armed forces to Castro and his brother Raul, the provision of Soviet Bloc military equipment and training to Cuban Forces, and the deepening commitment of the Soviet Union to preserve and strengthen the Castro regime.<sup>2</sup>

As of 1 July 1962, the monitoring of Soviet military deliveries indicated that there were 160 tanks, 770 field artillery and antitank guns, 560 antiaircraft guns, 35 jet fighters, 24 helicopters and 3,800 military vehicles of various types in Cuba.<sup>3</sup> On 27 July, Castro announced that Cuba would soon have new defenses against the US. On 29 August, as the weaponry continued to roll off Soviet ships in Cuban ports, a CIA U-2 photographed the first SA-2 SAMs. Human intelligence sources in Cuba were reporting the sightings of rockets on the island. We concluded that these rockets were not MRBMs/IRBMs.

On 19 September 1962, in NIE 85-3-62, *The Military Buildup in Cuba*, the Intelligence Community reiterated its belief that the USSR would not introduce offensive strategic weapons into Cuba. Its key conclusion stated:

The USSR could derive considerable military advantage from the establishment of Soviet MRBMs and IRBMs in Cuba, or from the establishment of a submarine base there. As between these two, the establishment of a submarine base would be the more likely. Either development, however, would be incompatible with Soviet practice to date and with Soviet policy as we presently estimate it. It would indicate a far greater willingness to increase the

level of risk in US-Soviet relations than the USSR has displayed thus far, and consequently to other areas and other problems in East-West relations.<sup>4</sup>

DCI McCone personally was not persuaded that the Soviet buildup was essentially defensive. Fate, however, would have him in Europe on an extended honeymoon when the crisis began. His messages to the President from Europe in mid-September advising that the evidence pointed to Soviet preparations for introducing offensive weapons into Cuba could not compete with the contrary judgment of the formal NIEs that the missiles would be for defensive purposes.

Following the discovery of the defensive SAMs in late August, the President warned Khrushchev that the US would not permit the introduction of offensive weapons. The Soviet leader's responses through several channels from Moscow to Washington repeated the official Soviet position that only defensive weapons were being introduced into Cuba. In his news conference on 13 September 1962, the President delivered a clear statement of the US position on Cuba and on the possibility of Soviet offensive weapons being deployed there.

**Soviet Buildup**

The Intelligence Community continued to monitor the rapid buildup and assess its implications. From July to 1 November 1962, the number of tanks would grow from 160 to 345; the field artillery and antitank guns from 770 to 1,320; the antiaircraft guns from 560 to 710; the jet fighters from 35 to 101; the helicopters from 24 to 70 or more; the military vehicles from 3,800 to between 7,500 and 10,000. And through late August, September and early October we continued to identify new categories of weaponry: the construction of 24 SAM sites with 500 missiles by 1 November; the introduction of some 24 to 32 Free Rocket Over Ground (FROG) rockets; the installation of four cruise missile sites and 160 air defense radars; and the arrival of 12 Soviet KOMAR-class cruise-missile patrol boats at Cuban ports.<sup>5</sup>

## U-2 Missions

From 1956 on, I had participated in the Intelligence Community's tasking of the U-2 by contributing the Army's and DIA's intelligence collection requirements to the flight planners of the operational missions. I had helped analyze the photographic intelligence from the U-2 flights over the Soviet Union from 1956 to 1960.

The extraordinary capabilities of the U-2 as an aircraft were complemented by its advanced photographic gear. The U-2 carried the HR-73B camera system, a big, high-technology camera with a 36-inch focal-length lens able to capture considerable detail from altitudes of 14 miles. The camera load was two 6,500-foot rolls of 9 1/2-inch film. Each mission could produce more than 4,000 frames of film, with vertical, single-frame ground coverage of 5.7 x 5.7 nautical miles.

Following the flight of 29 August 1962, CIA launched additional U-2 missions on 5, 17, 26, and 29 September and 5 and 7 October. Working through an interagency committee, collection requirements were formulated that would shape the flight profile of each mission. The work of reading the film from each mission took place in NPIC in an atmosphere of intense analytical debate throughout September and early October. These U-2 missions established an excellent baseline for judging the nature and pace of the Soviet military buildup.

The success of our efforts owed much to the brilliant leadership of Art Lundahl, who was internationally recognized for his contributions to photographic interpretation and photogrammetric engineering. His dedication to improving the nation's reconnaissance capabilities and his professional standards shaped the work of all who were a part of his crisis team.

## SA-2 Controversy

One issue for the photointerpreters was the intended role of the Soviet SA-2 GUIDELINE SAM, which had been operational with Soviet air defense forces since the late 1950s. The 30-foot-long SA-2 had a solid-propellant booster and a kerosene-based second

stage sustainer, and it could sprint to Mach 3 carrying a 280-pound high-explosive warhead with a proximity fuse to a range of 30 miles. Radio guidance from ground-based target acquisition radar fed steering commands to the missile's control fins. We assessed it as reliable and accurate.

The U-2 missions through 5 September revealed a disproportionate buildup of SA-2 launch sites in western Cuba. One school of thought contended that this deployment pattern was not particularly worrisome, given that Havana and the larger part of the Cuban population were in that region. Further, most of the sites were along Cuba's periphery, where one might expect such missiles arrayed in a national air-defense network.

Another line of analysis held that the disproportionate concentration of SA-2s in the west meant that the Soviets and the Cubans had important military equipment there requiring greater protection. The photointerpreters pushed on with their analysis, somewhat hampered by a policy-level decision following the 5 October mission to avoid the western sector on future U-2 missions because of administration concerns that an SA-2 might shoot down a U-2, thereby escalating the crisis.

Analysis was not based exclusively on photointerpretation. One of my DIA colleagues, Colonel John Wright, directed the work of a center in DIA that collated intelligence from all sources. The center evaluated the photography together with other sources, including reports from refugees and agents in Cuba. These reports continued to warn of large rockets, possibly missiles, arriving in Cuba and of suspicious military activity in western Cuba.

## Focus on San Cristobal

Colonel Wright and his staff became increasingly interested in the SA-2 sites near San Cristobal, in the western part of the island. Most important, the U-2 photography indicated that these sites formed the outline of a trapezoid. This suggested that the sites

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were forming a "point defense" to protect some extremely important weapons emplacements or installations.

This deployment pattern was similar to those identified near ballistic-missile launch sites in the Soviet homeland. The stationing of these SA-2s, together with human-source reporting of missiles in western Cuba, strongly suggested that there were offensive Soviet ballistic missiles to be found within the San Cristobal trapezoid.

### Shift In Responsibility

The President's advisers largely agreed that the new evidence warranted resuming U-2 missions over western Cuba. New requirements were issued for photographic reconnaissance of the San Cristobal area. Because of continuing concern over the international repercussions should one of the U-2s be shot down, it was decided that future U-2 missions should be flown by the Air Force. If any questions about the flights should arise, they would be acknowledged as military reconnaissance missions.

The 4080th Strategic Wing of the Strategic Air Command, based at Laughlin Air Force Base in Del Rio, Texas, was given the assignment. The next flight was set for 14 October, with Major Rudolph Anderson, USAF, as the pilot. The mission went flawlessly, and copies of the photography were sent by courier to NPIC, Navy analysts, the Strategic Air Command (SAC), and other key commands.

### Evidence of MRBMs

Photointerpreters at NPIC called me at the Pentagon on 15 October. MRBMs had been found and confirmed. I called General Carroll to tell him what I had just heard and that I was on my way to NPIC. He asked me to give him another call as soon as I had personally reviewed the evidence.

After a quick look at three or four of the frames, I called General Carroll back and told him that the film showed ballistic-missile carriers, associated equipment, and support trucks. The U-2 camera had caught an MRBM convoy just as it was preparing to pull into the cover of a wooded area.

That evening General Carroll, my colleague John McLaughlin and I reported directly to Deputy Secretary Gilpatric. He asked me the same question that the President would ask Art Lundahl the following morning. It was the same question that would be asked by each of the select senior US officials being informed of the discovery as they looked at the tiny objects and patterns on our photographs of the Cuban countryside: "Are you sure that these are Soviet MRBMs?" I answered, "I am convinced they are." The next morning, Lundahl told the President he was "as sure of this as a photointerpreter can be sure of anything...."

### Strategic Surveillance

The urgent work of the Executive Committee would begin on the morning of 16 October. While the world remained ignorant of the mounting crisis, those supporting the President and the Executive Committee were aware of the responsibility and trust that had been given us. The President needed absolute confirmation of the presence and numbers of MRBMs and any other offensive weapons that the Soviets had in place in Cuba. He needed time to marshal US ground, sea and air forces and to consider the options for their use should military action be required. He also needed time to decide how best to confront Khrushchev with the evidence, and he had to plan how to implement the US response. Secrecy was essential. More documentary evidence was required.

U-2s from SAC were moved to Florida. Between 15 and 22 October, they flew 20 missions over Cuba to search the entire island. These reconnaissance flights helped us to understand what the Soviets were up to and what stage of weapons deployment they had reached. This information enabled the Intelligence Community to give the President and his advisers its best judgment as to whether the missiles were operational and, if not, when they would most likely become operational.

As a result of highly classified and urgent work, the community would determine that the first of the MRBMs would become operational on 28 October.

While US intelligence had not provided strategic warning that the Soviets would introduce such weapons, intelligence had discovered the weapons before they became operational, giving the President an advantage in planning his response.

Analysis of U-2 photography went on around the clock, with few, even in the Intelligence Community, given access to the intelligence. As new photography became available, General Carroll and I would brief the Secretary and then take the same findings to the Chairman and the Joint Chiefs to prepare the Defense representatives for the continuing deliberations of the Executive Committee. Our photointerpreters poured over earlier U-2 photography of the geographic locations where we were now discovering the offensive weapons. These comparisons enabled us to determine when the Soviets had begun construction, a process which confirmed the clandestine and time-urgent design of the Soviet operation.

### Seaborne Shipments

With the deployment of the missiles in Cuba now established, we began to re-examine earlier photointelligence to determine how they had arrived. From September to mid-October, the Navy had photographed several Soviet merchant ships en route to Cuba, including the *Poltava* and the *Omsk*, riding high in the water and with unusually long cargo hatches. It was apparent that these merchant vessels must have been transporting a high-volume cargo that was not particularly heavy. We then realized that they had, in fact, been delivering missiles that were to be offloaded at night.

### SS-4s and SS-5s

The photography of the 17 October U-2 mission revealed a major new development: the construction of a fixed IRBM site at Guanajay, just west of Havana. While the mobile MRBM posed a serious threat, its range was limited to targets in the southern US.

We had studied the SS-4 MRBM since before its first appearance on parade in Moscow the year before. It had an overall length of just over 73 feet

with warhead attached. It had a support crew of 24 men, and it was serviced by a dozen vehicles. The SS-4 had sufficient fuel and thrust to deliver a 1-megaton nuclear warhead on short notice up to 1,000 miles, a range that threatened the southeastern US in an arc extending from Savannah, Georgia, to New Orleans, Louisiana.

The SS-5 IRBM, by contrast, had a range of over 2,200 miles, and it could hit any target in the continental US except Seattle, Spokane, and other cities in Washington state. It was clear that we were not facing a temporary expeditionary force in Cuba. The SS-5 required complex permanent launch sites, with troop quarters, missile shelters, warhead bunkers and a large logistics train.

We had monitored the development and testing of the SS-5 SKEAN since the late 1950s. Operational in 1961, the SS-5 was the newest of the Soviet Union's IRBMs and the product of their intensive strategic rocket program. Its warhead yield also was estimated at 1 megaton, but it had better inertial guidance than the SS-4.

### Four Key Sites

Continuing intelligence analysis provided irrefutable evidence that the Soviets were pushing ahead simultaneously with the installation of ballistic missiles at four separate locations: MRBMs at San Cristobal and Sagua La Grande, and IRBMs at Guanajay and Remedios. Soviet construction was progressing at a breakneck pace; photointelligence from successive U-2 missions indicated that sites were rapidly approaching operational status. Their construction workers were experiencing some difficulties as was evident from earth scarring and deep tire ruts produced by heavy transporters in the soft soil of the semitropical countryside.

The Soviets and Cubans were working almost continuously to set up 24 MRBM launchers plus 18 reserves for a total of 42 SS-4 MRBM nuclear missiles, as well as three fixed IRBM launch sites, each

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with four launchers. If these sites were completed, their missiles would significantly affect the strategic balance.

**Cratology**

The U-2 mission of 15 October discovered a third dimension to the impending nuclear threat. In late September, US maritime surveillance had spotted a merchant ship bound for Cuba carrying a number of large crates on its deck. To deduce their content, US photointerpreters had to resort to the fledgling "science" of cratology.

Unique dimensions, shapes, volumes and other features of the apparently innocuous-looking crates allowed the analysts to determine with some precision by mid-October that the crates contained disassembled IL-28/BEAGLE bomber aircraft.

The U-2 photographed 21 of these crates, one with the top open and the BEAGLE fuselage exposed, at San Julian Airfield on the 15th. This was our first sighting of part of the total force of 42 bombers the Soviet Union was delivering to the San Julian and Holguin Airfields.

**Meeting With Gromyko**

At the White House, the Executive Committee weighed the new evidence in its deliberations on the best course of action to recommend to the President. On 18 October, the President proceeded with an office call by Soviet Foreign Minister Gromyko, an appointment that had been made many weeks before. Without tipping his hand about the US discovery of the Soviet MRBMs, IRBMs and bombers in Cuba, President Kennedy underscored to Gromyko the unacceptability of Soviet offensive nuclear weapons on the island. Gromyko responded with assurances that the weapons being introduced were strictly defensive.

**SNIE's Judgments**

The Executive Committee soon narrowed the options to airstrikes against the missile sites and bomber bases versus a naval blockade of the island. On 20

October, the Intelligence Community published its views on the implications of the committee's options in SNIE 11-19-62, "*Major Consequences of Certain US Courses of Action on Cuba.*"

SNIE 11-19-62 was cautious about the likely results of either a selective or a total blockade of Cuba. It argued that nuclear warheads could be delivered covertly aboard aircraft or submarines evading the blockade, that the Soviet missiles already in Cuba would still be poised to strike, that it would not weaken Castro's regime, and that either a selective or total blockade would give the Soviet Union time to mobilize world pressure against the US. The SNIE judged that neither type of blockade would necessarily escalate to war, either in Cuba or elsewhere, and that the Soviets would not be driven to immediate military retaliation.

The estimate also judged that whatever the nature of any US military action against Cuba, it would not be likely to provoke Khrushchev and his colleagues into launching all-out nuclear war. The authors wrote:

We believe that there would probably be a difference between Soviet reaction to all-out invasion and Soviet reaction to more limited US use of force against selective objectives in Cuba. We believe that the Soviets would be somewhat less likely to retaliate with military force in areas outside of Cuba in response to speedy, effective invasion than in response to more limited forms of military action against Cuba. We recognize that such an estimate cannot be made with very great assurance and do not rule out the possibility of Soviet retaliation outside of Cuba in case of invasion. But we believe that a rapid occupation of Cuba would be more likely to make the Soviets pause in opening new theaters of conflict than limited action or action which drags out.<sup>6</sup>

**The President's Decision**

Proponents of the alternate options of US response continued to argue within the Executive Committee until the President authorized a selective blockade of



deliveries of offensive weapons to Cuba. The President had chosen a course which he had judged would not push Khrushchev beyond the brink. It would demonstrate US resolve, and it would provide the President and his advisers the time and the leverage they required in their communications with Khrushchev to demand that the USSR withdraw its missiles and bombers from Cuba.

President Kennedy's report to the American people on the Soviet missile and bomber buildup in Cuba was delivered from the White House Oval Office at 7:00 p.m., 22 October, one week after the discovery of the MRBMs at San Cristobal. I was with Navy photointerpreters in Suitland, Maryland. We listened to the President's somber, electrifying words. As stated in the second of his announced actions, the President had ordered low-level surveillance photo missions by Navy and Air Force tactical reconnaissance squadrons to begin the following morning.

Given the array of MiG-21 fighters, antiaircraft guns and SAM defenses that would confront our reconnaissance planes, tactical intelligence support was vital to their success. In turn, their success would be essential to the President's strategy. As we worked to prepare for the following day's briefing, there was a profound sense of urgency.

### Low-Level Missions

Shortly after dawn on 23 October, Navy pilots of Light Photographic Squadron 62 and Air Force pilots of the 363rd Tactical Reconnaissance Wing took off on the first low-level photo missions over Cuba. Later that day, the President issued Proclamation 3504: *Interdiction of the Delivery of Offensive Weapons to Cuba*. It stated that as of 2:00 p.m., 24 October, forces under his command had instructions to intercept any vessel or craft proceeding toward Cuba and to interdict the delivery of surface-to-surface missiles; bombers; bombs; air-to-surface rockets and guided missiles; warheads; mechanical and electrical equipment for such weapons; and any other materials subsequently designated by the Secretary of Defense.

Our aerial reconnaissance of Cuba took a quantum leap both in volume and in precision of detail with the low-level missions. The Navy and Marine Corps pilots assigned to Light Photographic Squadron 62 were flying the single-engine reconnaissance RF-8A version of the F-8 Crusader fighter. It carried five cameras. The Air Force pilots of the 363rd Tactical Reconnaissance Wing were flying the RF-101 reconnaissance version of the F-101 Voodoo fighter.

The RF-101's reconnaissance eyes were the KA-53 aerial reconnaissance cameras with black-and-white and color emulsion 5-inch aerial roll film loaded in 250-foot film cassettes, cameras with shutter speeds up to 1/3000th of a second. The combination of planes and cameras in these Navy and Air Force tactical units was as remarkable in its sophistication as was the technology aboard the U-2s.

The RF-8As and RF-101s covered their targets 500 feet off the ground at speeds of 600 mph. With this speed and altitude, the Soviets and Cubans had no warning, only the sonic roar as the reconnaissance planes flew by on flight profiles that brought them in low over the Gulf of Mexico with a pop-up over the target. At the successful conclusion of each mission, the VP-62 pilots would paint another dead chicken on the fuselages of their Crusaders to symbolize Castro's chickens coming home to roost.<sup>7</sup>

The reconnaissance photography these pilots were delivering was spectacular. It was clear, large-scale documentation. It permitted us to gain full understanding of the MRBMs that would be operational by the 28th and to track the continuing intensive construction of the IRBM sites. The photography provided our combat-mission planners with the precise detail they required in the event the President were to order a strike against the island.

As soon as each low-level mission delivered its film to the squadron and wing photo labs, it was developed and flown to Washington and to other photographic analysis centers.

*Trapezoid***The JRC**

The nerve center for the US reconnaissance effort was the Joint Reconnaissance Center (JRC) in the Pentagon, under the direction of then Colonel Ralph D. Steakley, USAF. The JRC had been created to provide the JCS, the Office of the Secretary of Defense, the Department of State and the White House with a focal point for policy decisions on the US reconnaissance missions being undertaken worldwide long before the Cuban missile crisis. The Intelligence Community, the Unified and Specified Commands and others would identify reconnaissance requirements. The JRC would clear mission plans through the appropriate policy level of the government, and, with approval received, authorize the reconnaissance missions.

We fed our reconnaissance targeting requirements to Steakley. He had assigned liaison officers from the Center to the Tactical Air Command and SAC. The JRC and the operational planners of the Air Force and Navy drew up detailed flight plans to fulfill the latest intelligence requirements. The work proceeded around the clock. Steakley had a cot in his office, where he lived throughout the crisis. He was under relentless operational pressure. He had received a telephone call from President Kennedy's secretary with the message, "The President has directed that you not be away from your phone for more than three rings...." Secretary McNamara had made it clear that he personally wanted to be certain that each mission flown was in accordance with a determined plan and a predetermined approval cycle. Steakley was regularly summoned to the White House to brief the President on the planned flights.

The President and the Executive Committee were seeing explicit details of the Soviet nuclear offensive buildup. They were following the advances of the MRBMs and IRBMs toward operational status with each day's low-level recce take. The missions, as the President knew, were dangerous and might escalate the crisis beyond the control of either side.

**A Bad Day**

On 27 October, an Air Force RB-47 flying maritime surveillance missions against Soviet shipping crashed on takeoff from Bermuda with the loss of all four

crew members. That same day, of a Soviet SA-2 GUIDELINE missile brought down a U-2 over Cuba flown by Major Rudolf Anderson, the pilot of the U-2 flight on 14 October that had filmed the discovery of the Soviet MRBMs. Anderson was killed, and the pressure to retaliate intensified.

**An Effective Cycle**

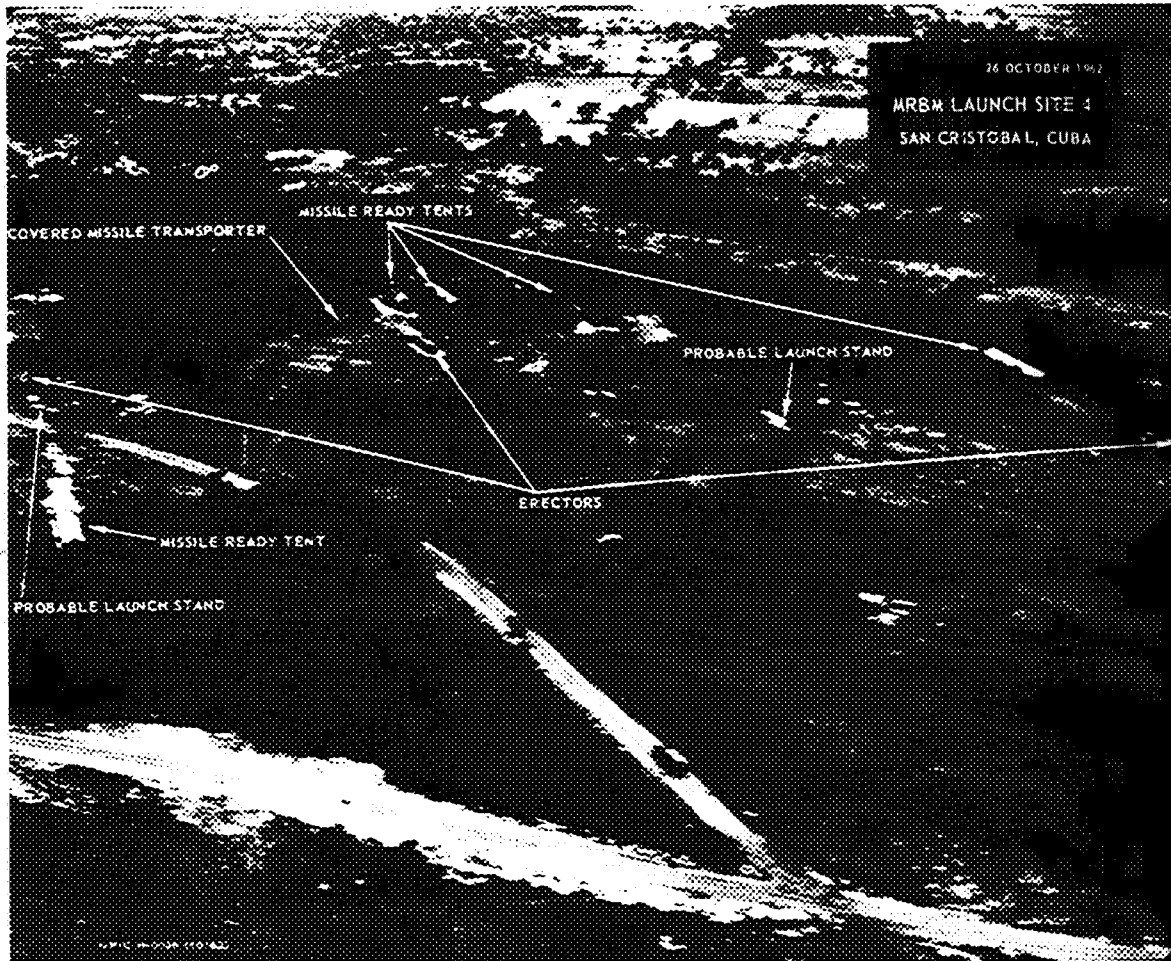
We felt this pressure in our support to Secretary McNamara and the JCS. The work cycle began with the delivery of hundreds of feet of new photography in Washington, usually each evening, which had to be analyzed around the clock. I would arrive at either the Pentagon or NPIC early each morning to review the findings and to prepare to brief McNamara and the JCS, usually before the start of the morning Executive Committee sessions at the White House. Current intelligence for targeting of SAM sites was fed to the military planners for inclusion in the target folders. There was a growing consensus that the US would have to act.

The gravity of the situation was confirmed by the results of the low-level reconnaissance missions. The JRC worked with Air Force and Navy planners in drawing up the final flight plans. The pilots agreed that flight tracks for each missions were flyable, and that they were the best tracks to achieve coverage of the requested targets. This success was matched by the cycle we had developed of film processing, readout and feedback to both the national level and the operators. The results of each day's reconnaissance were available to feed into the following day's planning and execution.

**White House Statement**

On 26 October, the President approved the release of a statement updating the American people on the status of the Soviet missile sites. It reported that development of the IRBM sites was continuing, with bulldozers and cranes observed clearing new areas within the sites. It noted that MRBMs had been observed, with cabling running from missile-ready tents

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to nearby power generators. And it concluded that the Soviets were trying to camouflage their efforts at the sites.

The USSR's measured response to the quarantine was of critical importance to the President's restrained approach to the crisis. No ships with prohibited or even questionable cargoes had tried to run the blockade. The shutdown of Major Anderson had brought the US to the brink of a retaliatory strike against military targets in Cuba, but the President remained determined to force Soviet compliance with US demands on terms short of war. Intelligence had given him the information he needed to catch

Khrushchev red-handed. There could be no question of the validity of the US charges. But the President knew he was running out of time: the MRBMs would become operational on 28 October.

### Messages from Khrushchev

On 26 October, Khrushchev sent President Kennedy first one message, then another. The first couched the Soviet Union's conditions for the withdrawal of its missiles and bombers from Cuba in terms of a

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requirement for an end to the US blockage and for a promise from the US that it would not invade Cuba. The second Khrushchev letter added another, far more difficult demand:

You are worried over Cuba. You say that it worries you because it lies at a distance of 90 miles across the sea from the shores of the United States. However, Turkey lies next to us. Our sentinels are pacing up and down watching each other. Do you believe that you have the right to demand security for your country and the removal of such weapons that you qualify as offensive, while not recognizing this right for us?

This is why I make this proposal: We agree to remove those weapons from Cuba which you regard as offensive weapons. We agree to do this and to state this commitment in the United Nations. Your representatives will make a statement to the effect that the United States, on its part, bearing in mind the anxiety and concern of the Soviet state, will evacuate its analogous weapons from Turkey. Let us reach an understanding on what time you and we need to put this into effect....<sup>8</sup>

### The US Replies

While the US missiles would eventually be withdrawn from Turkey, at the peak of the Cuban missile crisis the President rejected including them or any mention of them in the terms that would be set for the withdrawal of the Soviet missiles from Cuba. In the midst of the Executive Committee meeting on 27 October on the next step to be taken by the US, Attorney General Robert Kennedy proposed that the US reply to Khrushchev's first letter and not to the second. He actually drafted the reply, stating the terms we were willing to accept, plucking them from several often disparate Soviet messages. They were the terms on which the settlement ultimately was based.<sup>9</sup>

The President's reply of 27 October opened on a positive note, welcoming Khrushchev's "desire to seek a prompt solution to the problem." The

President then stressed that if there were to be a solution, work had to cease on the missile bases, and the offensive weapons in Cuba had to be rendered inoperable and removed, with supervision of the removal under appropriate UN arrangements. The US in turn would lift the quarantine and would assure the Soviet Union that it would not invade Cuba.

The President then hinted at future US willingness to consider the missiles in Turkey, without explicitly so stating. "The effect of such a settlement," he wrote, "on easing world tensions would enable us to work toward a more general arrangement regarding 'other armaments,' as proposed in your second letter which you made public." The President closed his reply by again stressing the imperative of an immediate Soviet halt to work on the MRBMs and IRBMs and rendering the weapons inoperable.<sup>10</sup>

Attorney General Kennedy handed over a copy of the President's reply to Soviet Ambassador Dobrynin, stressing the President's belief that the substance of the Soviet response to this message would dictate swiftly whether the two superpowers would resolve the crisis or escalate to war.

On 28 October 1962, Khrushchev agreed to President Kennedy's terms: work would stop on the missile sites, and the weapons would be dismantled and withdrawn. The word arrived quickly as we continued to support preparations for US military action. There was tremendous exhilaration. The Intelligence Community and the military shifted gears, moving to the responsibility of monitoring Soviet dismantlement and withdrawal.

### Monitoring Withdrawal

New orders from Moscow to the Soviet missile and bomber forces in Cuba were dispatched immediately. As early as 29 October, low-level reconnaissance flights brought back evidence that the MRBM missile erectors were no longer in their missile-ready firing positions. We would monitor every step of the Soviet withdrawal through photography, reports from

human sources, ship-to-ship inspections, air-to-ship surveillance, and other sources and methods. Weather permitting, the Navy RF-8As and Air Force RF-101s flew across Cuba on daily missions collecting thousands of frames of up-to-the-minute evidence for examination by the photointerpreters, analysts, and the senior levels of government.

Early on, the Soviets started to break up the IRBM sites—sites which would never meet their planned 15 December operational date, which was chosen to coincide with Khrushchev's planned address to the UN. Bulldozers tore up the missiles' concrete launch pads and smashed through missile-support facilities. Each of the sites was systematically monitored. The status of the support equipment, propellant trailers, nuclear weapons-handling vans and communications vans was also an intelligence indicator. We tracked their withdrawal from the missile sites to the ports and onto a succession of Soviet merchant ships. The reconnaissance cameras documented Soviet personnel boarding ships for the voyage back across the Atlantic.

The Navy quarantine remained in effect, examining any inbound ships and, in a new phase, inspecting outbound ships to determine their cargoes. The Soviets complied with orders to strip away canvas covering each of the missiles in their canisters, with each clearly in the open, riding as deck cargo. They also complied with orders to break open the wooden crates containing the IL-28 bomber wings and fuselages, permitting us to count each and to confirm their departure.

Quarantine commander Admiral Ward reported that while the business was deadly serious and while the US forces insisted on full, precise compliance with all demands, there was no sign of Soviet hostility.

### Status Reports

On 2 November, President Kennedy provided his first formal status report on the dismantling of the Soviet missile bases in Cuba in an address to the nation. He reported that careful examination of aerial photography and other information was confirming the destruction of the missile bases and preparation of the missiles for return to the USSR. He said that

US surveillance would continue to track the withdrawal closely and that this unilateral inspection and monitoring would continue until the US arranged for international inspection of the cargoes and overall withdrawal.

By the time of his news conference on 20 November, the President had received sufficient intelligence to be able to report that the missile sites had all been dismantled, that the missiles and associated equipment had departed Cuba aboard Soviet ships, that US inspection at sea had confirmed that the numbers departing included all known missiles, and that Khrushchev had informed him earlier that day that the IL-28 bombers would all be withdrawn from Cuba within 30 days. Following this Soviet compliance with US demands, the President announced that he had ordered the lifting of the quarantine. He went on to stress that close surveillance of Cuba would continue, bearing in mind that Castro had still not agreed to allow UN inspectors to verify the removal of all offensive weapons or to set safeguards in place to prevent their reintroduction.

In his news conference of 12 December, the President had to repeat his position of 20 November, stating that while the US continued to press for on-site inspection, he would take every step necessary through continuing close daily surveillance to ensure that no missiles or offensive weapons were reintroduced.

### Paying Tribute

With the quarantine lifted, the President flew to Florida on 26 November to pay tribute to the reconnaissance wings and squadrons. At Homestead Air Force Base, the President presented Outstanding Unit Awards to the 4080th Strategic Reconnaissance Wing and the 363rd Tactical Reconnaissance Wing. He saluted the work of the pilots and their ground crews:

I may say, gentleman, that you take excellent pictures, and I've seen a good many of them. And beginning with the photographs which

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were taken on the weekend in the middle of October, which first gave us conclusive proof of the buildup of offensive weapons in Cuba, through the days that have followed to the present time, the work of these two units has contributed as much to the security of the US as any units in our history, and any group of men in our history.<sup>11</sup>

He then flew to Key West, to Boca Chica Naval Air Station, to present Unit Citations to Navy Light Photographic Squadron 62 and Marine Light Photographic Squadron VMC-J2.

On 28 November, SAC Commander-in-Chief General Thomas Power awarded the Distinguished Flying Cross to 10 U-2 pilots of the 4080th. Admiral Robert Dennison, USN, presented the same decoration to 25 pilots of the Navy, Marine Corps, and Air Force tactical recce units. The next day the planes' cameras were again in action over Cuba.

### Monitoring Continues

The reconnaissance missions of November enabled us to monitor the disassembly and crating of the Il-28 bombers at San Julian and Holguin Airfields and the departure of the crates from Cuba, just as we had earlier monitored the destruction of the IRBM sites at Guanajay and Remedios and the departure of the MRBM missiles from San Cristobal and Sagua La Grande. The first missions of 1963 also enabled us to continue to monitor the status of the Soviets' considerable remaining defensive installations, weaponry and personnel, ostensibly in place to protect against the threat of invasion.

The number of Soviet troops had swollen to between 22,000 and 23,000 on Cuba at the peak of the crisis. With the departure of the missile and bomber forces, we could now identify some 17,000 troops still on the island. Our order of battle in early 1963 showed that Soviet military equipment in Cuba included 24 SAM sites with 500 missiles; 104 MiG fighters, including 24 of the new MiG-21 jets capable of Mach 2 performance; 200 air defense radars; 12 KOMAR-class missile patrol boats; upwards of 100 helicopters; four cruise-missile sites with 150 cruise

missiles; more the 700 anti-aircraft guns; 24 to 32 FROG rockets; 7,500 to 10,000 military support vehicles; more than 1,300 pieces of field artillery and anti-tank guns; and some 400 tanks.<sup>12</sup>

Taken together, this weaponry would have given the Soviets a layered set of ground, sea, and air defenses for their missile sites and bomber bases. And there could be little doubt that the remaining weapons were defensive in character. While the Intelligence Community assessed the MiG-21 as being capable of carrying a nuclear weapon, we knew that was not the fighter's intended mission. With a nuclear weapon aboard, the MiG-21 would have a combat radius of little more than 200 miles restricted to clear weather, daytime missions. Of prime importance, our analysis of each new batch of recce photography showed absolutely no evidence of the types of secure facilities that one could expect with confidence that the Soviets would have in place if there were still any nuclear weapons stored on the island.

We were confident of the complete withdrawal based on the comprehensive character of our reconnaissance and monitoring in late 1962 and early 1963.

### Refuting Rumors

When the US Congress reconvened in late January 1963, our hard evidence on the defensive nature of the Soviet forces in Cuba remained largely classified. The public debate was feeding rumors that Soviet nuclear offensive capabilities remained in Cuba, that missiles were hidden in caves, and that the MiG-21s and KOMAR patrol boats could deliver nuclear weapons. Such rumors were pouring in from anti-Castro Cuban refugees, and they were fueled by those still angry that the President had not invaded the island and done away with the communist regime.

Following his Congressional testimony on 5 February, DCI McCone issued a formal unclassified statement in the name of the USIB reviewing the entire Soviet buildup and the departure of the missiles: "We are convinced beyond reasonable doubt, as has

been stated by the Department of Defense, that all offensive missiles and bombers known to be in Cuba were withdrawn soon thereafter. . . Reconnaissance has not detected the presence of offensive missiles or bombers in Cuba since that time." Referring to the alleged storage of missiles in caves, McCone said, "All statements alleging the presence of offensive weapons are meticulously checked. So far the findings have been negative. Absolute assurance on these matters, however, could only come from continuing, penetrating on-site inspection."<sup>13</sup> The statement still did not defuse the issue.

In my appearance with Secretary McNamara before the House Subcommittee on Defense Appropriations on 6 February, the Secretary reviewed each phase of the Soviet buildup since the spring of 1962. To set the stage for my classified presentation to the subcommittee of the most important photography, the Secretary described the role of reconnaissance in some detail. Immediately after my presentation, the President decided that the photographic evidence had to be declassified and shared with the American people.

### **Briefing the Nation**

Shortly before noon, Secretary McNamara informed me that I was to present the briefing to the nation that evening on national TV from 5:00 to 7:00 p.m. I was to make the presentation in the State Department Auditorium to an audience of journalists and photographers assigned to the White House, State Department, and Defense Department. The briefing requested by the President included photos, charts, and tables that would document clearly the discovery of the Soviet ballistic missiles, their assembly and operational readiness, and their dismantlement and removal from the island. The photos were selected from among the best available and reflected the superb quality of the photography regularly provided by our reconnaissance jets.

Secretary McNamara told me that he would introduce the presentation and take the follow-on questions. He asked to see the text of my briefing and was surprised when I told him that there was no written text because I had committed the briefing to memory and that the sequence of the photographs and charts would shape and pace the presentation.

The Secretary directed his military assistant, Colonel George Brown, USAF, who would go on to become Chairman of the Joint Chiefs of Staff, to take me under his charge for the remainder of the day and ensure that I was at the State Department by 4:00 p.m.

By 3:30 p.m., we were ready. The graphics had been checked and rechecked, classifications removed or covered, and some descriptive annotations added. Colonel Brown and I arrived at the State Department at 4:00 p.m. The auditorium was larger than I had expected, and the viewing screen—at least 12 feet by 8 feet—towered above the stage. This screen would enhance and display the photographs to maximum advantage. To tell the story effectively, however, I had to be able to point to photographic details that would be well beyond reach. I contacted my special assistant, Captain Billy R. Cooper, USAF, at the Pentagon about the problem, and he was more than equal to the challenge. He grabbed a roll of tape, securely joined two long fishing poles, and rushed to his car. I had this tailor-made pointer in hand and was set and ready to go at 5:00 p.m.

The air was charged in the auditorium. The press was out in full force, and McNamara was to the point:

Good afternoon, ladies and gentlemen. In recent days questions have been raised in the press and elsewhere regarding the presence of offensive weapons systems in Cuba. I believe beyond any reasonable doubt that all such weapons systems have been removed from the island and none have been reintroduced. It is our purpose to show you this afternoon the evidence on which we base that conclusion.

Since 1 July, over 400 reconnaissance flights have been flown over the island of Cuba by US military aircraft. These reconnaissance flights provided the essential basis for the national decisions taken with respect to Cuba in October. They provided the basis for the military preparations necessary to support those decisions. They provided the evidence we were able to present to the world to document the basis and the rationale of our action.

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The reconnaissance flights recorded the removal of the offensive weapon systems from Cuba, and they continued to provide the foundation for our conclusion that such weapons systems have not been reintroduced into the island.

Mr. John Hughes, the Special Assistant to General Carroll, the Director of DIA, will present to you a detailed photographic review of the introduction of Soviet military personnel

and equipment into Cuba, with particular emphasis on the introduction and removal of the offensive weapons systems.

After Mr. Hughes completes his review, I will summarize very briefly our current estimates of the Soviet military strength in Cuba.

Mr. Hughes.

I began my briefing.





## NOTES

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3. CIA Fact Sheet, *Soviet Forces in Cuba*, 5 February 1963.
4. SNIE 85-3-62, *The Military Buildup in Cuba*, 19 September 1962.
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6. SNIE 11-19-62, *Major Consequences of Certain US Courses of Action on Cuba*, 20 October 1962.
7. Newsletter, *Light Photographic Squadron Sixty-Two (VPF-62)*, February 1963.
8. Kennedy, Robert F., *op cit*, p. 198-199.
9. *Ibid*, pp 15-16.
10. *Ibid*, p. 203.
11. Public Papers of the Presidents of the United States, John F. Kennedy, 1962; US Government Printing Office, Washington, D.C.; 1963; pp. 832-833.
12. CIA Fact Sheet, *Soviet Forces in Cuba*, 5 February 1963.
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